REMARKS

Pursuant to the Request for Continued Examination (RCE) filed herewith, and responsive to the Final Office Action mailed October 22, 2002, Applicants respectfully request reconsideration. To further the prosecution of this application, each of the issues raised in the Final Office Action has been considered and is responded to below.

Claims 1-30, 33-55, 57-63, 65-75, and 77-101 are pending in this application, of which claims 1, 7, 16, 25, and 30 are independent claims. In this amendment, claims 31, 56, 64, and 76 have been cancelled, claims 16-20, 24-26, 28-30, 38-55, 57-63, 65-75, and 77-96 have been amended, and claims 97-101 have been added. The application as now presented is believed to be in condition for allowance.

Applicants respectfully point out that the claims have been amended herein not to overcome any of the prior art rejections set forth in the Final Office Action, but rather solely to improve the readability of some of the claims, further define Applicants' contribution to the art, and expedite examination of some of the claims in view of an election/restriction requirement. In particular, Applicants respectfully submit that the claims as pending before the amendments herein, and as presently pending, patentably distinguish over the cited references, as discussed in detail below.

I. Election/Restrictions

On page 2, the Final Office Action states that claims 38-96 were directed to an invention that allegedly was independent or distinct from the invention originally claimed. However, the Final Office Action failed to indicate any reason for this assertion, in violation of MPEP §821.03 (the first sentence on page 2 of the Final Office Action ends prematurely with a colon; it appears that this is a portion of a form paragraph that was not completed as required by MPEP §821.03). Without providing any support for the election/restriction, the Final Office Action merely constructively elected the originally presented claims 1-31 and 33-37 and withdrew claims 38-96. Accordingly, Applicants respectfully traverse the withdrawal of claims 38-96 based on the lack of any showing in support of the election/restriction.

In any case, to expedite prosecution of this application and consideration of claims 38-96, claim 38 has been rewritten in dependent form to depend from independent claim 25, which is one of the originally presented claims. As a result, claims 38-55, 57-63 and 65 now depend from claim 25. Claims 39-55, 57-63 and 65 also have been amended to account for the amendments to claim 38, ensure consistent terminology with claim 25, and further define Applicants' contribution to the art. Consideration of dependent claims 38-55, 57-63 and 65 respectfully is requested.

Similarly, claim 87 has been rewritten in dependent form to depend from independent claim 25. As a result, claims 87-96 now depend from claim 25. Claims 88-96 have been amended to account for the amendments to claim 87, ensure consistent terminology with claim 25, and further define Applicants' contribution to the art. Consideration of dependent claims 87-96 respectfully is requested.

Likewise, claim 66 has been rewritten in dependent form to depend from independent claim 30, which also is one of the originally presented claims. As a result, claims 66-75 and 77-86 now depend from claim 30. Claims 67-75 and 77-86 have been amended to account for the amendments to claim 66, ensure consistent terminology with claim 30, and further define Applicants' contribution to the art. Consideration of dependent claims 66-75 and 77-86 respectfully is requested.

The subject matter of each of claims 38-55, 57-63, 65-75, and 77-96 is fully supported by the specification as filed, by the priority document Serial No. 60/156,672, and/or U.S. Patent No. 6,016,038, which is incorporated by reference in the specification on page 6 (e.g. see lines 1-3; a copy of U.S. Patent No. 6,016,038 is enclosed with this Amendment for the Examiner's convenience). Accordingly, no new matter is added.

For example, the concept of mixing colors is discussed generally in the specification at least on page 2, lines 12-15, page 8, lines 1-13, and in the priority document. The concept of mixing colors to produce white light also is discussed in the specification on page 8, line 6, and in the priority document. Additionally, the various features and functions relating to calibration are discussed, for example, at least on the top of page 3, on page 5, lines 21-23, and throughout pages 8-9 of the specification, as well as in the priority document. Concepts relating to pulse

width modulation, addressable processors/controllers for LED sources, and network configurations are discussed, for example, in U.S. Patent No. 6,016,038. It is respectfully believed that one of ordinary skill in the art would readily understand and appreciate the recitations in these claims, based on the teachings of the specification, the priority document, and the incorporated patent, as clarifying and emphasizing various features of the disclosed inventions that are believed to be patentable and which further define Applicants' contribution to the art. Accordingly, favorable consideration of these claims is requested.

II. Newly Added Claims

Dependent claims 97-101, which depend from originally presented claim 25, have been added to more fully define Applicants' contribution to the art. Support for these new claims may be found in the specification as filed, at least on pages 14 and 15; hence, no new matter is added. Favorable consideration of claims 97-101 respectfully is requested.

III. Rejections of the Claims Over Eberly Under 35 U.S.C. §103(a)

On page 2 of the Office Action, claims 1, 2, 7, 8, 12, 13, 15-17, 21-27, 29-31 and 33-35 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Eberly (U.S. Patent No. 5,073,029). Claim 31 has been cancelled herein; hence, the rejection of this claim over Eberly is moot. With respect to the remaining claims indicated above, Applicants respectfully traverse these rejections.

A. Claims 1-6

Applicants' claim 1 is directed to a system for calibrating light output by a light-emitting diode (LED). The system of claim 1 comprises a housing to which an LED to be calibrated may be positioned therein and a photosensor disposed in the housing for obtaining an output measurement generated by the LED. The system also comprises a processor in communication with the photosensor and the LED, wherein the processor is configured to formulate a calibration value based on a comparison of the output measurement and a reference value, such that during a subsequent generation of light output, the calibration value permits the subsequent light output to

have a calibrated intensity. The system further comprises a memory mechanism in association with the LED to store the calibration value.

Eberly does not disclose or suggest the system of Applicants' claim 1. In particular, Eberly does not disclose or suggest a processor configured to formulate a calibration value based on a comparison of an LED generated output measurement and a reference value, such that during a subsequent generation of light output, the calibration value permits the subsequent light output to have a calibrated intensity, as recited in claim 1. Rather, Eberly merely discloses that the electrical output signals of a photodetector, and not the intensity of LEDs, are normalized (e.g., see Applicants' remarks in the response to the first Office Action); more specifically, in each embodiment of Eberly's disclosure, Eberly's LEDs output respectively different *uncalibrated* intensities.

On page 3, the Final Office Action first concedes that Eberly "does not disclose a calibrated intensity of the LED based on a comparison." Indeed, as discussed above, Applicants agree with this analysis. However, the Final Office Action then goes on to allege that Eberly "further disclose [sic] a calibrated intensity of the LED based on a comparison in a different embodiment (col. 10, lines 34-45)." Inasmuch as this apparent contradiction can be understood, Applicants respectfully disagree.

The passage of Eberly cited in the Final Office Action, namely col. 10, lines 34-45, has absolutely nothing to do with "a calibration intensity based on a comparison," as alleged in the Office Action. In fact, this passage does not even mention the word "calibration."

Rather, this passage of Eberly discusses an algorithm for adjusting an individual heat pulse duration for each LED in Eberly's LED/photodetector pair array, so as to stabilize the light output of the LEDs notwithstanding temperature variations of the LEDs. In particular, Eberly explains that when current is applied to an LED so as to generate radiation, the LED heats up and its efficiency of converting electrical energy to radiant energy changes (col. 9, lines 65-68). When an LED is pulsed, it heats during the pulse but cools during the interval between pulses; hence, the emitted light intensity may vary as a function of pulse interval and duration (col. 10, lines 1-4). In order to compensate for a change in efficiency of LED emission during long intervals between pulses, Eberly subjects the LEDs to short heating pulses at regular periods

when the LEDs are not being used for a data acquisition cycle of the instrument in which they are employed, so as to maintain the LEDs at a nearly constant temperature, hence regulating their light emission (col. 10, lines 5-15).

In the passage cited in the Final Office Action, Eberly further explains that the duration of such heating pulses may be adjusted based on a long-term compensation algorithm which utilizes a "drift table" (col. 10, lines 26-30). In Eberly, each entry in the drift table corresponds to a particular LED of Eberly's array, and initially is given the same non-critical initialization value corresponding to a nominal heat pulse time of approximately 500 microseconds (col. 10, lines 32-33). Between consecutive data acquisition cycles of Eberly's instrument, a drift table entry for a given LED may be changed if consecutive photodetector outputs for the given LED have changed (increased/decreased) from cycle to cycle (col. 10, lines 35-41). This has the effect of changing the average power into the LED, and hence the efficiency of the LED over the long term (col. 10, lines 41-45).

As can be readily appreciated from the foregoing, these passages of Eberly have absolutely nothing to do with calibration values, as alleged in the Final Office Action. Again, more generally, nowhere in the reference does Eberly disclose or suggest a calibration value as recited in claim 1; specifically, Eberly completely fails to disclose or suggest a processor in communication with a photosensor and an LED, wherein the processor is configured to formulate a calibration value based on a comparison of an output measurement of light output by the LED and a reference value, such that during a subsequent generation of light output, the calibration value permits the subsequent light output to have a calibrated intensity, as recited in claim 1. As discussed above, and as conceded in the Office Action, Eberly *completely fails to disclose or suggest* LEDs that generate radiation having a calibrated intensity.

For at least the foregoing reasons, claim 1 patentably distinguishes over Eberly and is in condition for allowance. Therefore, the rejection of claim 1 under 35 U.S.C. §103(a) as allegedly being obvious over Eberly should be withdrawn.

Claims 2-6 depend from claim 1 and are respectfully believed to be allowable for at least the same reasons.

B. Claims 7-15

Claim 7 is directed to a calibration device comprising a support to which an LED to be calibrated may be positioned thereon, and a photosensor adjacent to the support for obtaining an output measurement from the light output generated by the LED. The device of claim 7 further comprises a communication mechanism through which the output measurement from the photosensor is communicated to a processor, which processor formulates a calibration value based on a comparison of the output measurement and a reference value, and through which the calibration value from the processor is communicated to the LED. Claim 7 further recites that the LED includes a memory mechanism on which the calibration value communicated from the processor is stored.

Eberly does not disclose or suggest the device of Applicants' claim 7. First, as discussed above in connection with claim 1, Eberly does not disclose or suggest calibration values used in connection with LEDs. Additionally, Eberly does not disclose or suggest a communication mechanism through which a calibration value from a processor is communicated to an LED, nor does the Office Action cite any passage of Eberly as providing such a teaching. In Eberly, normalization (and not calibration) is performed by processing output signals from a photodetector; it is particularly noteworthy in Eberly that the generation of light by the LEDs is unaffected by the normalization process. Thus, Eberly not only fails to teach or suggest a communication mechanism through which a calibration value is communicated to an LED, but also discloses a system wherein such a communication mechanism would simply be of no value.

On page 3, the Final Office Action notes that Eberly also does not disclose an LED including a memory mechanism on which the calibration value is stored, as recited in claim 7. However, the Office Action alleges that it would have been obvious to have such an LED, "since rearranging parts of an invention only involved [sic] routine skill in the art." Applicants respectfully disagree with this assertion, and respectfully submit that the comments in the Office Action in support of this assertion (see pages 3-4 of the Office Action) have no basis whatsoever in the cited Eberly reference. In any case, Applicants again point out that claim 7 recites features other than the memory mechanism that are not disclosed or suggested by Eberly and not discussed in the Office Action; accordingly, the issue of the memory mechanism is moot, as

claim 7 patentably distinguishes over Eberly for other reasons and is in condition for allowance. Therefore, the rejection of claim 7 under 35 U.S.C. §103(a) as allegedly being obvious over Eberly should be withdrawn.

Claims 8-15 depend from claim 7 and are allowable for at least the same reasons.

C. Claims 16-24

Applicants' claim 16, as amended, is directed to a calibration device comprising a housing and an activation unit for inducing light output from at least one remote LED to be calibrated, wherein the at least one LED is not included in the housing. Claim 16 also recites a photosensor disposed in the housing for obtaining at least one output measurement of light generated by the at least one LED. The device of claim 16 further comprises a communication mechanism in the housing through which the at least one output measurement from the photosensor is communicated to a processor, which processor formulates at least one calibration value based on a comparison of the at least one output measurement and at least one reference value, and through which the at least one calibration value from the processor can be received and subsequently communicated to the at least one LED.

As discussed above in connection with claim 1, Eberly fails to disclose or suggest a processor to formulate at least one calibration value in the manner set forth in claim 16. Additionally, as discussed in connection with independent claim 7, Eberly does not disclose or suggest a communication mechanism through which a calibration value from the processor is communicated to an LED. Furthermore, Eberly does not disclose or suggest a calibration device comprising a housing and an activation unit for inducing light output from at least one remote LED to be calibrated, wherein the at least one LED is not included in the housing. For at least these reasons, claim 16 patentably distinguishes over Eberly and is in condition for allowance. Therefore, the rejection of claim 16 under 35 U.S.C. §103(a) as allegedly being obvious over Eberly should be withdrawn.

Claims 17-24 depend from claim 16 and are allowable for at least the same reasons.

D. Claims 25-29, 38-55, 57-63, 65 and 87-96

Applicants' claim 25, as amended, is directed to an ***illumination*** device. In contrast, Eberly is directed to a system for obtaining absorbance measurements of a plurality of biological/chemical solution samples (Abstract). In the system of Eberly, each sample is associated with one LED located on one side of the sample to irradiate the sample (Col. 4, lines 31-34). When radiation from the LED passes through the sample, it is partially absorbed (Col. 4, lines 34-36). A photodetector on an opposite side of the sample detects radiation that is transmitted through the sample, and provides an output signal from which absorbance data can be obtained (Col. 4, lines 36-50). Hence, it should be appreciated that the radiation produced by an LED in the system of Eberly is not intended as light to be observed by an observer or to significantly illuminate a space, but rather merely is intended to irradiate a sample in a closed environment to obtain scientific data. Hence, Eberly clearly is not directed to an illumination device, as recited in claim 25.

The illumination device of claim 25 comprises a plurality of differently colored LED illumination sources configured to generate an additive mixture of colored light. The device also includes at least one photosensor for obtaining at least one output measurement of radiation generated by at least some of the LED sources. The device of claim 25 further comprises a processor in communication with the at least one photosensor for making a comparison of the at least one output measurement and at least one a reference value and formulating at least one calibration value based on the comparison. The device further comprises a memory mechanism coupled to the processor and on which the resulting at least one calibration value is stored.

Not only does Eberly fail to disclose or suggest an ***illumination*** device but, moreover, Eberly also fails to disclose or suggest a plurality of differently colored LED illumination sources configured to generate an additive mixture of colored light, as recited in claim 25. Furthermore, as discussed above at least in connection with claim 1, Eberly does not disclose or suggest an illumination device that includes a processor to formulate a calibration value, as recited in claim 25, nor does the Office Action cite any passage as supporting this teaching.

For at least these reasons, claim 25 patentably distinguishes over Eberly and is in condition for allowance. Therefore, the rejection of claim 25 under 35 U.S.C. §103(a) as allegedly being obvious over Eberly should be withdrawn.

Claims 26-29, 38-55, 57-63, 65 and 87-96 depend from claim 25 and are allowable for at least the same reasons.

E. Claims 30, 33-37, 66-75 and 77-86

Applicants' claim 30, as amended, is directed to a method for calibrating light output by at least one light-emitting diode (LED). The method comprises acts of: generating light output from the at least one LED in a substantial absence of ambient light; obtaining at least one output measurement for the light output generated by the at least one LED; comparing the at least one output measurement to at least one reference value; formulating at least one calibration value based on the act of comparing; storing the at least one calibration value in memory; recalling the at least one calibration value from the memory during a subsequent generation of light output; and applying the at least one calibration value to the at least one LED such that the at least one calibration value permits the subsequent light output to have a calibrated intensity.

As discussed above in connection with the other independent claims, Eberly completely fails to disclose or suggest formulating a calibration value that permits light output from an LED to be adjusted in any way, let alone to have a calibrated intensity. Thus, Eberly does not teach the method of claim 30. For at least this reason, claim 30 patentably distinguishes over Eberly and is in condition for allowance. Therefore, the rejection of claim 30 under 35 U.S.C. §103(a) as allegedly being obvious over Eberly should be withdrawn.

Claims 33-37, 66-75 and 77-86 depend from claim 30 and are allowable over Eberly for at least the same reasons.

IV. Rejections of the Claims over Eberly and Parker Under 35 U.S.C. §103(a)

On page 6 of the Final Office Action, claims 5, 6, 9-11, and 18-20 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Eberly in view of Parker (McGraw-Hill Dictionary of Scientific and Technical Terms). Since claims 5, 6, 9-11, and 18-20 are believed

to be allowable on the basis of their dependency, Applicants believe that it is unnecessary at this time to address the merits of the rejection of these claims. Accordingly, Applicants respectfully reserve the right to specifically address these claim rejections in the future, if deemed necessary.

Conclusion

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the number listed below to discuss any outstanding issues related to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to deposit account No. 23/2825.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claims 31, 56, 64, and 76 have been cancelled.

Claims 16-20, 24-26, 28-30, 38-55, 57-63, 65-75, and 77-96 have been amended as follows:

16. (Twice Amended) A calibration device comprising:

a housing;

an activation unit for inducing light output from [an] at least one remote LED to be calibrated, the at least one LED not included in the housing;

a photosensor [at one end of] disposed in the housing for obtaining [an] at least one output measurement [from the] of light [output] generated by the at least one LED; and

a communication mechanism in the housing through which the at least one output measurement from the photosensor is communicated to a processor, which processor formulates [a] at least one calibration value based on a comparison of the at least one output measurement and [a] at least one reference value, and through which the at least one calibration value from the processor can be received [by the device] and subsequently communicated to the at least one LED.

17. (Amended) A device as set forth in claim 16, wherein communication between the [communication mechanism] activation unit and either of the processor and the at least one LED [can be] is implemented by at least one of a wireless connection [cable], [wire] a non-wireless connection, and a network connection[, or a combination thereof].

18. (Amended) A device as set forth in claim [16] 17, further including the processor, wherein the [communication mechanism includes a transmitter and a receiver] processor is located within the housing of the device.

19. (Amended) A device as set forth in claim [18, wherein communication between the processor and either of the transmitter and receiver is by wireless means] <u>17, wherein the processor is a remote processor not included in the housing, and wherein the communication mechanism includes wireless means to communicate with the remote processor</u>.

20. (Amended) A device as set forth in claim 19, wherein the wireless means includes <u>at least</u> one of [a] radio frequency (RF) <u>means</u>, infrared (IR) <u>means</u>, microwave <u>means</u>, electromagnetic transmission <u>means</u>, acoustic <u>means</u>, <u>and</u> Bluetooth <u>means</u>[, home RF, or other wireless means].

24. (Amended) A device as set forth in claim 16, further including a [processor for formulating a calibration value from an adjustment of the output measurement against the reference value,] <u>memory mechanism for storing at the calibration device the at least one calibration value received from the processor, wherein the activation unit is configured to relay the at least one calibration value to the at least one LED</u>, such that during a subsequent generation of light output, the <u>at least one</u> calibration value permits the subsequent light output to approximate an output accorded to the reference value.

25. (Twice Amended) An illumination device comprising:

[a housing;]

[an] <u>a plurality of differently colored</u> LED illumination [source positioned within the housing] <u>sources configured to generate an additive mixture of colored light</u>;

[a] <u>at least one</u> photosensor [within the housing and adjacent to the illumination source] for obtaining [an] <u>at least one</u> output measurement <u>of radiation</u> generated by <u>at least some of</u> the LED <u>sources</u>;

a processor [within the housing and] in communication with the <u>at least one</u> photosensor for making a comparison of the <u>at least one</u> output measurement [received from the photosensor and a] <u>and at least one</u> reference value and formulating [a] <u>at least one</u> calibration value based on the comparison; and

a memory mechanism coupled to the [LED illumination source] <u>processor</u> and on which the resulting <u>at least one</u> calibration value [from the processor] is stored.

26. (Amended) A device as set forth in claim 25, further including a display on which parameters regarding light output from at least some of the LED sources may be provided to inform a user of a status of the light output.

28. (Amended) A device as set forth in claim 25, [further including a calibration activation mechanism to initiate calibration of the device] wherein the at least one reference value includes a plurality of pre-programmed reference values that are stored on the memory mechanism.

29. (Amended) A device as set forth in claim [25, wherein the LED illumination source includes a plurality of LEDs] 28, wherein the plurality of pre-programmed reference values are stored on the memory mechanism as a table of fixed values representative of respective types of the plurality of LED sources.

30. (Amended) A method for calibrating light output by [a] at least one light-emitting diode (LED), the method comprising acts of:

[a)] generating light output from the at least one LED [in a substantial absence of ambient light];

[b)] obtaining [an] at least one output measurement for the light output generated by the at least one LED;

[c)] comparing the at least one output measurement to [a] at least one reference value; [and]

[d)] formulating [a] at least one calibration value based on the act [c), such that] of comparing;

storing the at least one calibration value in memory;

recalling the at least one calibration value from the memory during a subsequent generation of light output[,]; and

applying the at least one calibration value to the at least one LED such that the at least one calibration value permits the subsequent light output to have a calibrated intensity.

38. (Amended) [A lighting device to generate light having a single calibrated color at a given time formed by mixing a first color and at least one second color different from the first color, the single calibrated color having an intensity sufficient to significantly illuminate a space, the lighting device comprising:] The illumination device of claim 25, wherein:

the plurality of LED sources includes:

at least one first light source adapted to output first radiation having [the] a first color [and a first intensity sufficient to significantly illuminate the space]; and

at least one second light source adapted to output second radiation having [the] a second color different from the first color [and a second intensity sufficient to significantly illuminate the space]; [and]

[a] the processor is configured to receive at least first and second lighting commands[, the processor configured to] and, based on the at least one calibration value, control the at least one first light source so as to output the first radiation at a first calibrated intensity that substantially corresponds in a predetermined manner to the first lighting command, the processor further configured to control the at least one second light source so as to output the second radiation at a second calibrated intensity that substantially corresponds in a predetermined manner to the second lighting command[,wherein the at least one first light source and the at least one second light source are arranged with respect to each other so as to mix the first and second radiation having the respective first and second calibrated intensities to produce the single calibrated color at the given time].

39. (Amended) The [lighting] illumination device of claim 38, wherein [the at least one first light source includes a first plurality of light emitting diodes (LEDs)] the at least one first light source and the at least one second light source are arranged with respect to each other so as to mix the first and second radiation having the respective first and second calibrated intensities to produce a single calibrated color at a given time.

40. (Amended) The [lighting] illumination device of claim [39] 38, wherein [the at least one second light source includes a second plurality of light emitting diodes (LEDs)] the processor is configured as an addressable processor to receive the at least first and second lighting commands via a network connection based on an address of the processor.

41. (Amended) The [lighting] <u>illumination</u> device of claim [38] <u>39</u>, wherein the at least first and second lighting commands are provided to the processor such that the single calibrated color produced by mixing the first and second radiation having the respective first and second calibrated intensities is a calibrated substantially white color.

42. (Amended) The [lighting] <u>illumination</u> device of claim [41] <u>38</u>, wherein [at least one of the at least one first light source and the at least one second light source includes a plurality of LEDs] <u>the processor is configured to control the at least one first light source and the at least one second light source using a pulse width modulation technique, and wherein the at least first and second commands represent respective duty cycles of pulse width modulation signals used to control the at least one first light source and the at least one second light source</u>.

43. (Amended) The [lighting] <u>illumination</u> device of claim 38, further comprising an at least partially transparent housing that at least partially encloses the at least one first light source and the at least one second light source so as to mix the first and second radiation.

44. (Amended) The [lighting] <u>illumination</u> device of claim [43] <u>42</u>, [further comprising at least one photosensor disposed in the housing and coupled to the processor, the at least one photosensor adapted to measure at least one of the first radiation and the second radiation] <u>wherein the processor is configured as an addressable processor to receive the at least first and second lighting commands via a network connection based on an address of the processor</u>.

45. (Amended) The [lighting] <u>illumination</u> device of claim 38, wherein <u>the at least one calibration value includes a plurality of calibration values, and wherein</u> the processor is configured to:

apply at least one first calibration value to the first lighting command to control the at least one first light source to output the first calibrated intensity; and

apply at least one second calibration value to the second lighting command to control the at least one second light source to output the second calibrated intensity.

46. (Amended) The [lighting] illumination device of claim 45, [further comprising at least one] wherein the memory mechanism is configured to store at least the at least one first calibration value and the at least one second calibration value.

47. (Amended) The [lighting] illumination device of claim [46] 45, wherein the [at least one] memory mechanism includes:

a first memory integrated with the at least one first light source, the first memory storing the at least one first calibration value; and

a second memory integrated with the at least one second light source, the second memory storing the at least one second calibration value.

48. (Amended) The [lighting] illumination device of claim 45, [further comprising at least one photosensor coupled to the processor,] wherein the at least one photosensor is adapted to measure the first radiation and the second radiation, wherein the at least one reference value includes a plurality of reference values, and wherein the processor is configured to:

determine the at least one first calibration value by comparing the measured first radiation to at least one first reference value; and

determine the at least one second calibration value by comparing the measured second radiation to at least one second reference value.

49. (Amended) The [lighting] illumination device of claim 48, further comprising a housing to enclose at least the at least one photosensor, the at least one first light source, and the at least one second light source.

50. (Amended) The [lighting] illumination device of claim 48, wherein the at least first and second lighting commands are provided to the processor such that [the] a single calibrated color produced by mixing the first and second radiation having the respective first and second calibrated intensities is a calibrated substantially white color.

51. (Amended) The [lighting] illumination device of claim 50, wherein [at least one of the at least one first light source and the at least one second light source includes a plurality of LEDs] the processor is configured to control the at least one first light source and the at least one second light source using a pulse width modulation technique, wherein the at least first and second commands represent respective duty cycles of pulse width modulation signals used to control the at least one first light source and the at least one second light source, and wherein the processor is configured to apply the at least one first and second calibration values to the at least first and second commands so as to adjust the respective duty cycles of the pulse width modulated signals.

52. (Amended) The [lighting] illumination device of claim 51, [further comprising a housing to enclose at least the at least one photosensor, the at least one first light source, and the at least one second light source] wherein the processor is configured as an addressable processor to receive the at least first and second lighting commands via a network connection based on an address of the processor.

53. (Amended) The [lighting] illumination device of claim 38, wherein the first lighting command includes a first reference signal, and wherein the processor is configured to determine at least one first calibration value for the at least one first light source such that the at least one first light source outputs the first radiation at a first reference intensity when the first lighting command is the first reference signal.

54. (Amended) The [lighting] illumination device of claim 53, [further comprising at least one photosensor coupled to the processor,] wherein the at least one photosensor is adapted to measure at least the first radiation, and wherein the processor is configured to determine the at least one first calibration value by:

applying the first reference signal to the at least one first light source;

monitoring the measured first radiation from the at least one photosensor;

making a comparison of the measured first radiation and at least one first reference value; and

determining the at least one first calibration value based on the comparison.

55. (Amended) The [lighting] illumination device of claim 54, further comprising a housing to enclose at least the at least one photosensor, the at least one first light source, and the at least one second light source.

57. (Amended) The [lighting] illumination device of claim 53, wherein the processor is configured to apply the at least one first calibration value to at least one subsequent first lighting command to control the at least one first light source to output the first calibrated intensity.

58. (Amended) The [lighting] illumination device of claim 57, wherein the second lighting command includes a second reference signal, and wherein the processor is configured to determine at least one second calibration value for the at least one second light source such that the at least one second light source outputs the second radiation at a second reference intensity when the second lighting command is the second reference signal.

59. (Amended) The [lighting] illumination device of claim 58, [further comprising at least one photosensor coupled to the processor,] wherein the at least one photosensor is adapted to measure at least the second radiation, and wherein the processor is configured to determine the at least one second calibration value by:

applying the second reference signal to the at least one second light source;

monitoring the measured second radiation from the at least one photosensor;

making a comparison of the measured second radiation and at least one second reference value; and

determining the at least one second calibration value based on the comparison.

60. (Amended) The [lighting] illumination device of claim 59, further comprising a housing to enclose at least the at least one photosensor, the at least one first light source, and the at least one second light source.

61. (Amended) The [lighting] illumination device of claim 58, [further comprising at least one] wherein the memory mechanism is configured to store at least the at least one first calibration value and the at least one second calibration value.

62. (Amended) The [lighting] illumination device of claim 58, wherein the processor is configured to apply the at least one second calibration value to at least one subsequent second lighting command to control the at least one second light source to output the second calibrated intensity.

63. (Amended) The [lighting] illumination device of claim 58, wherein the at least first and second lighting commands are provided to the processor such that [the] a single calibrated color produced by mixing the first and second radiation having the respective first and second calibrated intensities is a calibrated substantially white color.

65. (Amended) The [lighting] illumination device of claim [64] 63, further comprising a housing to enclose at least the at least one photosensor, the at least one first light source, and the at least one second light source.

66. (Amended) [A lighting] The method [to generate light having a single calibrated color at a given time, the single calibrated color having an intensity sufficient to significantly illuminate a space, the lighting method comprising] of claim 30, wherein the act of applying comprises acts of:

a) generating first radiation from at least one first LED in response to a first lighting command, the first radiation having a first color [and a first intensity sufficient to significantly illuminate the space];

b) generating second radiation from at least one second LED in response to a second lighting command, the second radiation having a second color different from the first color [and a second intensity sufficient to significantly illuminate the space];

c) processing the first lighting command, based on the at least one calibration value, such that the generated first radiation has a first calibrated intensity that substantially corresponds in a predetermined manner to the first lighting command; and

d) processing the second lighting command, based on the at least one calibration value, such that the generated second radiation has a second calibrated intensity that substantially corresponds in a predetermined manner to the second lighting command[; and e) mixing the first and second radiation having the respective first and second calibrated intensities to produce the single calibrated color at the given time].

67. (Amended) The [lighting] method of claim 66, [wherein: the act a) includes an act of generating the first radiation via a first plurality of light emitting diodes (LEDs)] further including an act of:

e) mixing the first and second radiation having the respective first and second calibrated intensities to produce a single calibrated color at a given time.

68. (Amended) The [lighting] method of claim [67] 66, [wherein: the act b) includes an act of generating the second radiation via a second plurality of light emitting diodes (LEDs)] further including an act of:

receiving the at least first and second lighting commands via a network connection based on at least one network address.

69. (Amended) The [lighting] method of claim [66] 67, further comprising an act of:

providing the at least first and second lighting commands such that the single calibrated color produced in the act e) is a calibrated substantially white color.

70. (Amended) The [lighting] method of claim [69] 66, wherein [at least one of] the acts a) and b) [includes] include an act of [generating radiation via a plurality of LEDs] controlling the at least one first LED and the at least one second LED using a pulse width modulation technique, wherein the at least first and second commands represent respective duty cycles of pulse width modulation signals used to control the at least one first LED and the at least one second LED.

71. (Amended) The [lighting] method of claim [66] 67, [further comprising] wherein the act e) comprises an act of:

passing the first and second radiation through an at least partially transparent material so as to mix the first and second radiation.

72. (Amended) The [lighting] method of claim 66, wherein:

the act c) includes an act of applying at least one first calibration value to the first lighting command to provide the first calibrated intensity; and

the act d) includes an act of applying at least one second calibration value to the second lighting command to provide the second calibrated intensity.

73. (Amended) The [lighting] method of claim 72, [further comprising] wherein the act of storing comprises an act of:

storing at least the at least one first calibration value and the at least one second calibration value in [at least one] the memory.

74. (Amended) The lighting method of claim 72, [further comprising acts of] wherein:

the act of obtaining at least one output measurement for the light output generated by the at least one LED includes an act of measuring the first radiation and the second radiation; and

the act of formulating at least one calibration value includes acts of:

determining the at least one first calibration value by comparing the measured first radiation to at least one first reference value; and

determining the at least one second calibration value by comparing the measured second radiation to at least one second reference value.

75. (Amended) The [lighting] method of claim 74, further comprising an act of:

providing the at least first and second lighting commands [such that the single calibrated color produced in the act e) is] so as to generate a calibrated substantially white color.

77. (Amended) The [lighting] method of claim 66, wherein the first lighting command includes a first reference signal, and wherein the act c) includes an act of:

c1) determining at least one first calibration value such that the first radiation is generated at a first reference intensity when the first lighting command is the first reference signal.

78. (Amended) The [lighting] method of claim 77, wherein [the act c1) includes acts of]:

the act of generating light output from the at least one LED includes an act of asserting the first reference signal;

the act of obtaining at least one output measurement for the light output generated by the at least one LED includes an act of measuring the first radiation generated in response to the first reference signal;

the act of comparing the at least one output measurement to at least one reference value includes an act of making a comparison of the measured first radiation and at least one first reference value; and

the act of formulating at least one calibration value includes an act of determining the at least one first calibration value based on the comparison.

79. (Amended) The [lighting] method of claim 77, [further comprising] wherein the act of storing comprises an act of:

storing at least the at least one first calibration value in [at least one] the memory.

80. (Amended) The [lighting] method of claim 77, wherein the act c) further includes an act of:

c2) applying the at least one first calibration value to at least one subsequent first lighting command to provide the first calibrated intensity.

81. (Amended) The [lighting] method of claim 80, wherein the second lighting command includes a second reference signal, and wherein the act d) includes an act of:

d1) determining at least one second calibration value such that the second radiation is generated at a second reference intensity when the second lighting command is the second reference signal.

82. (Amended) The [lighting] method of claim 81, wherein [the act d1) includes acts of]:

the act of generating light output from the at least one LED includes an act of asserting the second reference signal;

the act of obtaining at least one output measurement for the light output generated by the at least one LED includes an act of measuring the second radiation generated in response to the second reference signal;

the act of comparing the at least one output measurement to at least one reference value includes an act of making a comparison of the measured second radiation and at least one second reference value; and

the act of formulating at least one calibration value includes an act of determining the at least one second calibration value based on the comparison.

83. (Amended) The [lighting] method of claim 81, [further comprising] wherein the act of storing comprises an act of:

storing at least the at least one second calibration value in [at least one] the memory.

84. (Amended) The [lighting] method of claim 81, wherein the act d) further includes an act of:

d2) applying the at least one second calibration value to at least one subsequent second lighting command to provide the second calibrated intensity.

85. (Amended) The [lighting] method of claim 84, further comprising an act of:

providing the at least first and second lighting commands [such that the single calibrated color produced in the act e) is] so as to generate a calibrated substantially white color.

86. (Amended) The [lighting] method of claim [85] 84, wherein [at least one of]:

the acts a) and b) [includes] include an act of [generating radiation via a plurality of LEDs] controlling the at least one first LED and the at least one second LED using a pulse width modulation technique, wherein the at least first and second commands represent respective duty

cycles of pulse width modulation signals used to control the at least one first LED and the at least one second LED; and

the acts c) and d) include an act of applying the at least one first and second calibration values to the at least first and second commands so as to adjust the respective duty cycles of the pulse width modulated signals.

87. (Amended) [A lighting device, comprising:

a plurality of high-intensity LEDs adapted to generate an additive mixture of colored light to illuminate a space; and] The illumination device of claim 25, wherein the processor includes calibration means for adjusting the light output of at least some [LEDs] LED sources of the plurality of [high-intensity LEDs] LED sources, based on the at least one calibration value, such that the additive mixture of colored light has a calibrated color.

88. (Amended) The [lighting] illumination device of claim 87, wherein the additive mixture of colored light is a substantially white light, and wherein the calibration means is configured to adjust the light output of at least some [LEDs] LED sources of the plurality of [high-intensity LEDs] LED sources, based on the at least one calibration value, such that the additive mixture of colored light has a calibrated substantially white color.

89. (Amended) The [lighting] illumination device of claim 87, wherein the calibration means includes means for compensating for perceptible differences in light output between similar [lighting] illumination devices.

90. (Amended) The [lighting] illumination device of claim 87, wherein the calibration means includes means for scaling the light output of at least some [LEDs] LED sources of the plurality of [high-intensity LEDs] LED sources so as to produce the calibrated color.

91. (Amended) The [lighting] illumination device of claim 87, wherein the calibration means includes means for adjusting commands sent to at least some [LEDs] LED sources of the plurality of [high-intensity LEDs] LED sources, based on the at least one calibration value, so as to produce the calibrated color.

92. (Amended) The [lighting] <u>illumination</u> device of claim 91, wherein the means for adjusting commands includes means for applying <u>the</u> at least one calibration value to at least one command sent to at least some [LEDs] <u>LED sources</u> of the plurality of [high-intensity LEDs] <u>LED sources</u>.

93. (Amended) The [lighting] <u>illumination</u> device of claim 92, [further comprising means for storing the at least one calibration value] <u>wherein the processor is configured to control the plurality of LED sources via a plurality of pulse width modulated signals, wherein the at least one command relates to at least one parameter of at least one pulse width modulated signal of the plurality of pulse width modulated signals, and wherein the processor is configured to apply the at least one calibration value to the at least one command so as to adjust the at least one parameter of the at least one pulse width modulated signal.</u>

94. (Amended) The [lighting] <u>illumination</u> device of claim [91, wherein the calibration means includes: first means for determining at least one calibration value; and second means for applying the at least one calibration value to at least one command sent to at least some LEDs of the plurality of high-intensity LEDs] <u>93, wherein the at least one parameter includes a duty cycle of the at least one pulse width modulated signal, and wherein the processor is configured to apply the at least one calibration value to the at least one command so as to adjust the duty cycle of the at least one pulse width modulated signal</u>.

95. (Amended) The [lighting] <u>illumination</u> device of claim 94, [wherein the first means includes: means for measuring the light output from at least some LEDs of the plurality of high-intensity LEDs; means for comparing the measured light output to at least one reference value] <u>wherein:</u>

<u>the processor is configured as an addressable processor to be coupled to a network connection, the processor further being configured to receive the at least one command from the network connection based at least in part on an address of the processor</u>.

96. (Amended) The [lighting] illumination device of claim 95, [further comprising means for storing the at least one calibration value] wherein the at least one command is communicated over the network connection using a DMX protocol, and wherein the processor is configured to receive the at least one command using the DMX protocol and to apply the at least one calibration value to the at least one command based at least in part on the DMX protocol.